

OBSERVATIONS & RECOMMENDATIONS

After reviewing data collected from **SONDOGARDY POND** the program coordinators recommend the following actions.

FIGURE INTERPRETATION

Unfortunately, the association was not able to sample the Pond during the 2000 summer months. The visit by the V LAP Coordinator was cancelled. The monitors did conduct some early March samples, which are discussed below.

- Chlorophyll-a is a measure of algal abundance in the pond. The chlorophyll-a concentration was very low in March (Table 1). This was to be expected, as the surface of the pond was still covered with ice. With little sunlight penetrating the ice cover there are few phytoplankton able to reproduce to large numbers. However, if the ice surface is clear and conditions are right, a bloom can occur. This did not seem to be the case in March.
- The March epilimnetic phosphorus concentration was similar to previous summer concentrations, which might indicate an external source of the nutrient was present in the spring. The hypolimnetic phosphorus level was typically much lower than during previous summer months. Phosphorus is the limiting nutrient for plants and algae. Generally, external sources of phosphorus are human-induced, either through fertilizers, septic system failures, or agriculture. Keeping the watershed residents informed about the sources of phosphorus and the impacts the nutrient has on a waterbody may help to maintain the low concentrations.

OTHER COMMENTS

- The 132 Inlet was also sampled in March and revealed lower conductivity (Table 6) and phosphorus (Table 8) values than in the previous summers. These results are promising; in the spring, water quality can be adversely affected by spring runoff carrying nutrients and pollutants into the water body. This inlet did not appear to affect the pond's quality.
- Please contact the V LAP Coordinator this spring to schedule our annual lake visit. It is important that we come to the lake so we can conduct a dissolved oxygen test and collect a plankton sample. The

Coordinator can be reached at (603) 271-2658 or through e-mail at vlap@des.state.nh.us.

- The pH of samples collected in March was slightly lower than normal averages (Table 4). This may indicate acid precipitation accumulations in the winter snowpack.

NOTES

- Monitor's Note (3/1/00): Tributary flow slightly above normal. No storms.
- Biologist's Note (3/1/00): Turbidity readings may not be accurate. The meter was not calibrating correctly using the 1.0 NTU standard, so the 20 range was used. Therefore, readings might be higher than they should be.

USEFUL RESOURCES

What is a Watershed?, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

Road Salt and Water Quality, WD-WSQB-7, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

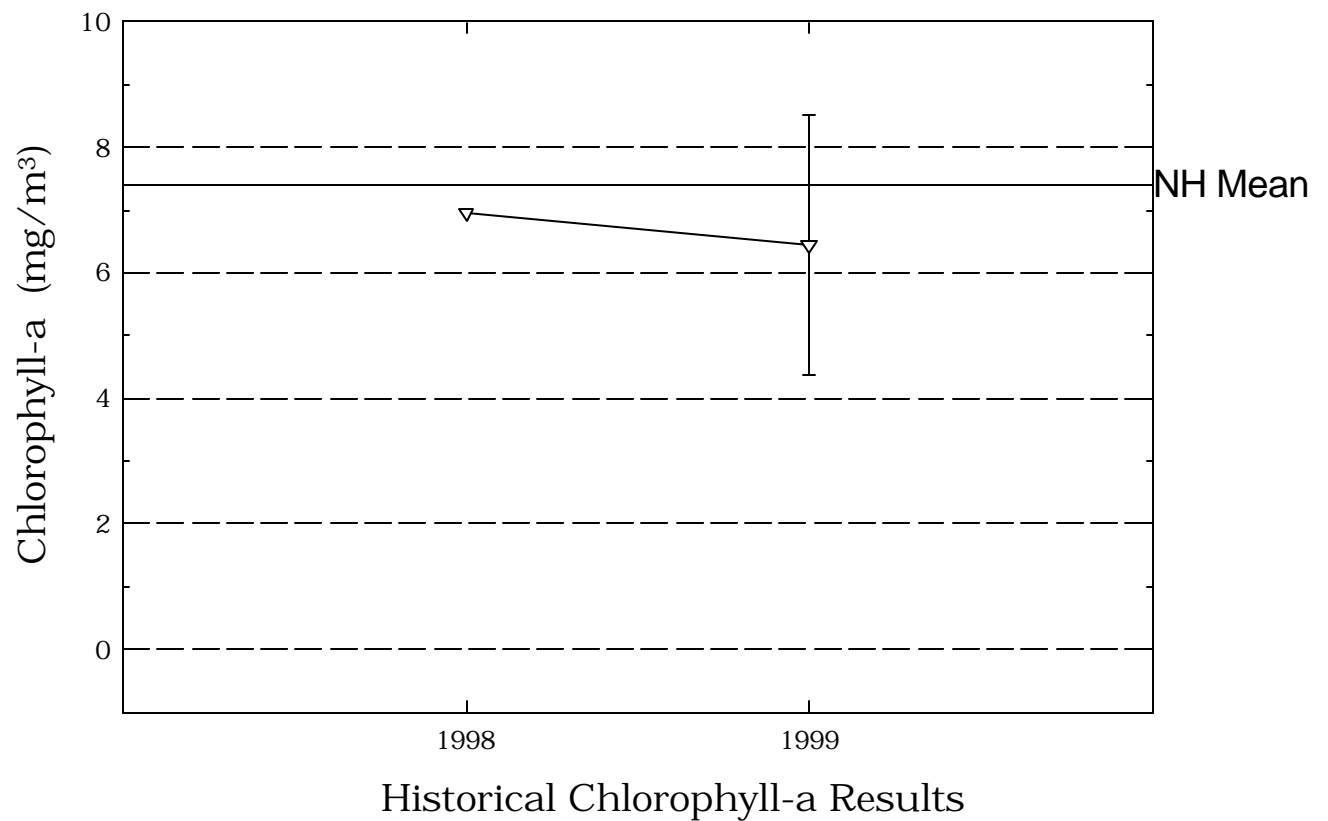
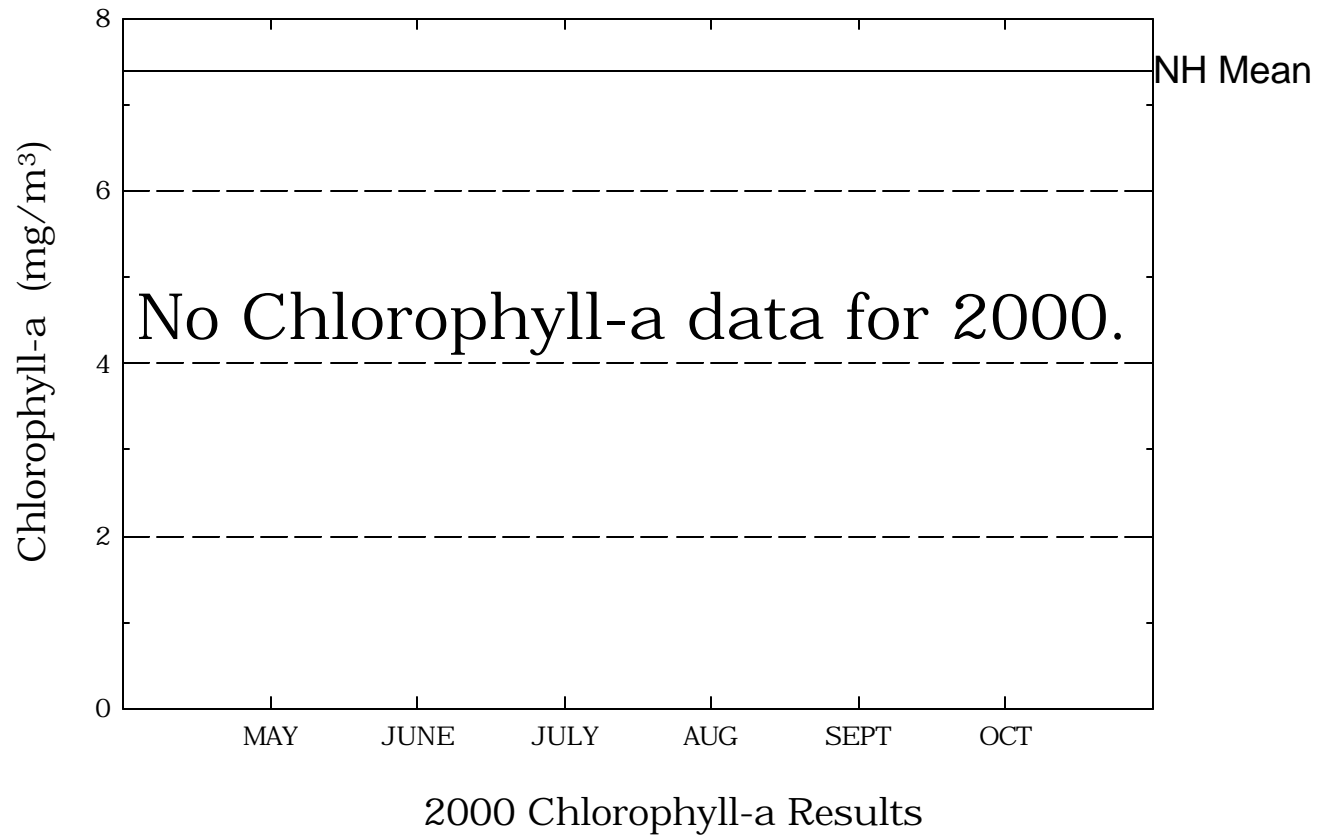
Effects of Phosphorus on New Hampshire's Lakes, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

Answers to Common Lake Questions, NHDES-WSPCD-92-12, NHDES Booklet, (603) 271-3503.

A Brief History of Lakes, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

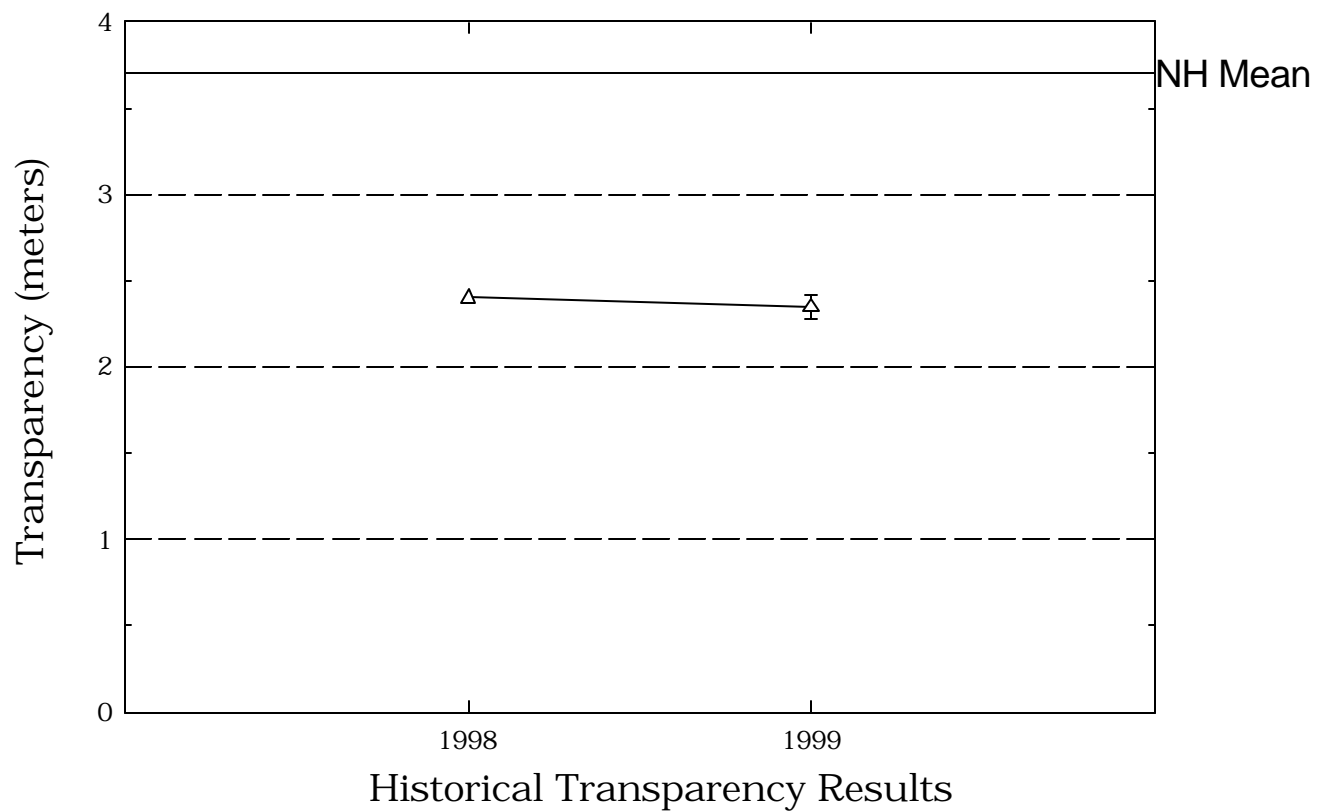
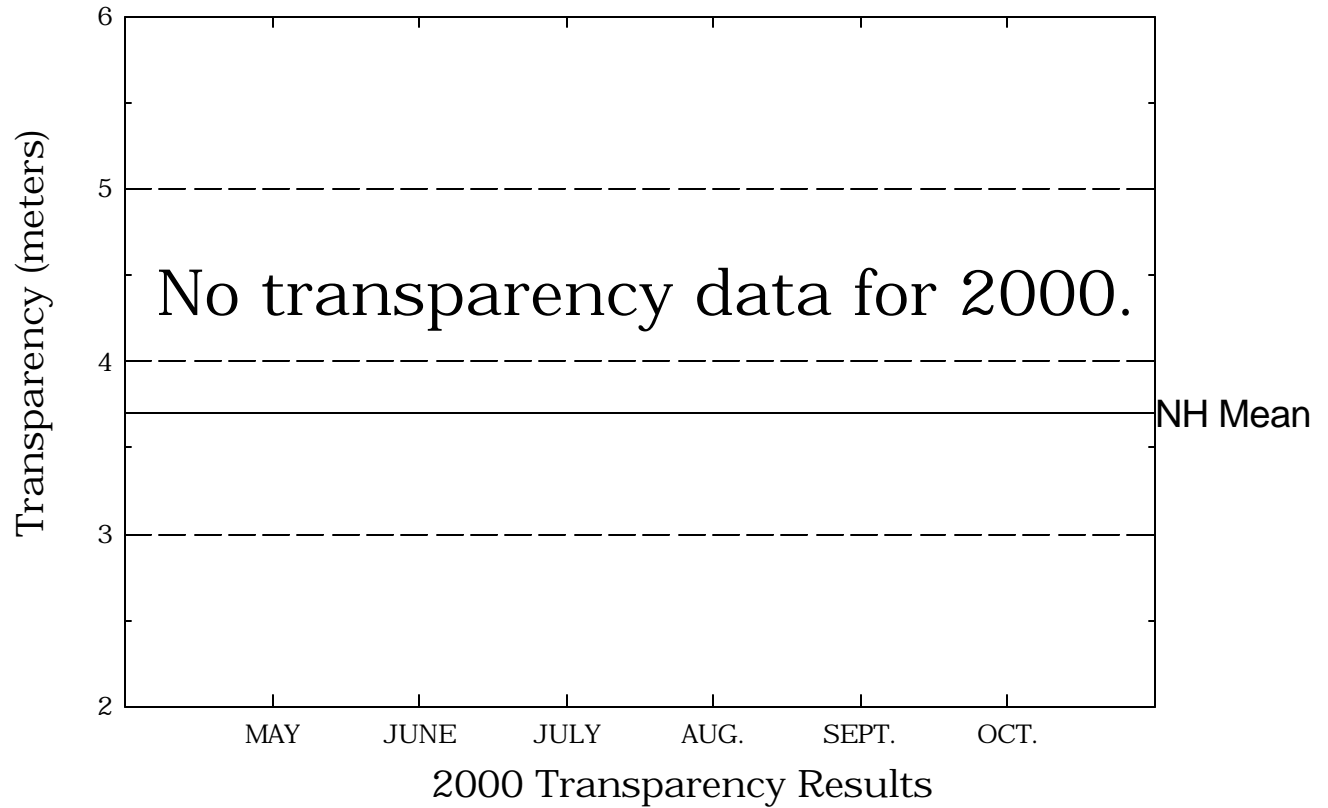
Sondogardy Pond

Figure 1. Monthly and Historical Chlorophyll-a Results



Sondogardy Pond

Figure 2. Monthly and Historical Transparency Results



Sondogardy Pond

Figure 3. Monthly and Historical Total Phosphorus Data.

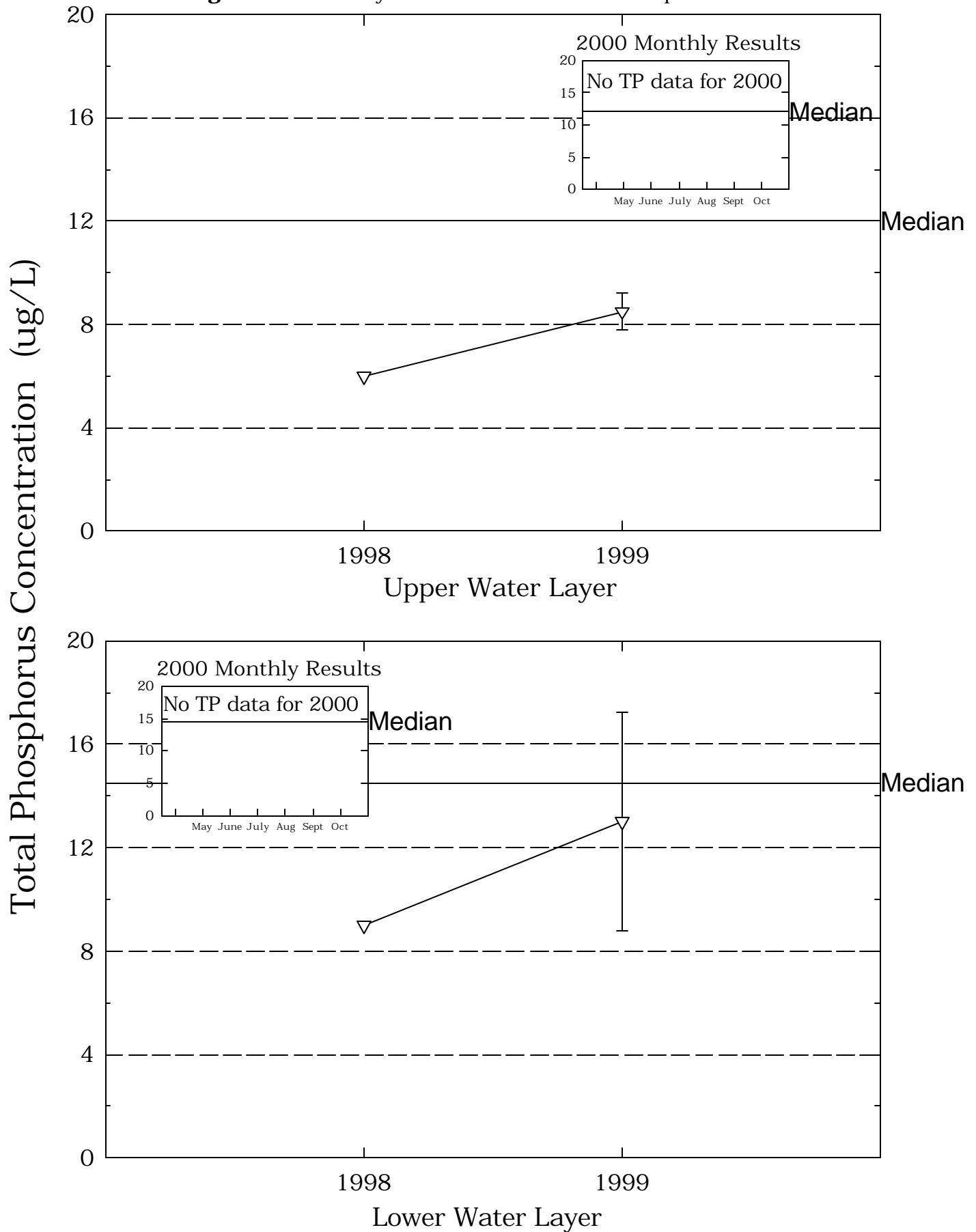


Table 1.

SONDOGARDY POND

NORTHFIELD

**Chlorophyll-a results (mg/m³) for current year and historical
sampling periods.**

Year	Minimum	Maximum	Mean
1998	6.95	6.95	6.95
1999	4.98	7.92	6.45
2000	1.28	1.28	1.28

Table 2.

SONDOGARDY POND

NORTHFIELD

Phytoplankton species and relative percent abundance.

Summary for current and historical sampling seasons.

Date of Sample	Species Observed	Relative % Abundance
08/28/1998	MELOSIRA	69
	ELAKATOTHRIX	15
	DINOBRYON	6
06/25/1999	RHIZOLENIA	73
	MOUGEOTIA	7
	CHRYSPHAERELLA	7

Table 3.

SONDOGARDY POND

NORTHFIELD

**Summary of current and historical Secchi Disk
transparency results (in meters).**

Year	Minimum	Maximum	Mean
1998	2.4	2.4	2.4
1999	2.3	2.4	2.3

Table 4.

SONDOGARDY POND

NORTHFIELD

pH summary for current and historical sampling seasons.

Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
132 INLET	1998	6.89	6.89	6.89
	1999	6.97	6.97	6.97
	2000	6.39	6.39	6.39
COLD BK	1998	6.87	6.87	6.87
	1999	6.95	6.95	6.95
EPILIMNION	1998	6.91	6.91	6.91
	1999	6.74	6.95	6.83
	2000	6.30	6.30	6.30
HYPOLIMNION	1998	6.50	6.50	6.50
	1999	6.49	6.84	6.63
	2000	6.19	6.19	6.19
METALIMNION	1999	6.68	6.68	6.68
	2000	6.16	6.16	6.16
OUTLET	1999	6.82	6.82	6.82
SONDOGARDY RD BK	1998	7.04	7.04	7.04

Table 4.

SONDOGARDY POND

NORTHFIELD

pH summary for current and historical sampling seasons.

Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
	1999	7.05	7.05	7.05
	2000	6.38	6.38	6.38

Table 5.

SONDOGARDY POND

NORTHFIELD

Summary of current and historical Acid Neutralizing Capacity.

Values expressed in mg/L as CaCO₃.

Epilimnetic Values

Year	Minimum	Maximum	Mean
1998	8.80	8.80	8.80
1999	8.10	8.70	8.40
2000	6.60	6.60	6.60

Table 6.

**SONDOGARDY POND
NORTHFIELD**

**Specific conductance results from current and historic
sampling seasons. Results in uMhos/cm.**

Station	Year	Minimum	Maximum	Mean
132 INLET ABOVE POND				
	1999	118.4	118.4	118.4
132 INLET ABOVE TRAI				
	1999	48.3	48.3	48.3
132 INLET AT RUST BK				
	1999	183.8	183.8	183.8
132 INLET BELOW POND				
	1999	103.9	103.9	103.9
132 INLET BELOW TRAI				
	1999	82.6	82.6	82.6
132 INLET				
	1998	147.4	147.4	147.4
	1999	114.4	378.3	246.3
	2000	89.3	89.3	89.3
COLD BK				
	1998	654.4	654.4	654.4
	1999	746.7	746.7	746.7
EPILIMNION				
	1998	122.5	122.5	122.5
	1999	140.0	152.1	146.0
	2000	105.6	105.6	105.6
HYPOLIMNION				
	1998	122.9	122.9	122.9
	1999	142.1	144.6	143.3
	2000	115.3	115.3	115.3

Table 6.**SONDOGARDY POND
NORTHFIELD****Specific conductance results from current and historic
sampling seasons. Results in uMhos/cm.**

Station	Year	Minimum	Maximum	Mean	
METALIMNION	1999	146.9	146.9	146.9	
	2000	112.5	112.5	112.5	
OUTLET	1999	136.8	136.8	136.8	
SONDOGARDY RD BK	1998	55.2	55.2	55.2	
	1999	54.9	54.9	54.9	
	2000	62.3	62.3	62.3	

Table 8.**SONDOGARDY POND****NORTHFIELD**

**Summary historical and current sampling season Total
Phosphorus data. Results in ug/L.**

Station	Year	Minimum	Maximum	Mean
132 INLET ABOVE POND				
	1999	10	10	10
132 INLET ABOVE TRAI				
	1999	11	11	11
132 INLET AT RUST BK				
	1999	6	6	6
132 INLET BELOW POND				
	1999	10	10	10
132 INLET BELOW TRAI				
	1999	11	11	11
132 INLET				
	1998	130	130	130
	1999	11	20	15
	2000	8	8	8
COLD BK				
	1998	6	6	6
	1999	10	10	10
EPILIMNION				
	1998	6	6	6
	1999	8	9	8
	2000	8	8	8
HYPOLIMNION				
	1998	9	9	9
	1999	10	16	13
	2000	5	5	5

Table 8.**SONDOGARDY POND****NORTHFIELD**

**Summary historical and current sampling season Total
Phosphorus data. Results in ug/L.**

Station	Year	Minimum	Maximum	Mean
METALIMNION				
	1999	8	8	8
	2000	9	9	9
OUTLET				
	1999	9	9	9
SONDOGARDY RD BK				
	1998	11	11	11
	1999	11	11	11
	2000	9	9	9

Table 10.
SONDOGARDY POND
NORTHFIELD

Historic Hypolimnetic dissolved oxygen and temperature data.

Date	Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
August 28, 1998	3.5	15.1	2.4	24.0
June 25, 1999	4.0	15.7	0.5	4.6

Table 11.

**SONDOGARDY POND
NORTHFIELD**

**Summary of current year and historic turbidity sampling.
Results in NTU's.**

Station	Year	Minimum	Maximum	Mean
132 INLET	1998	1.0	1.0	1.0
	1999	3.4	3.4	3.4
	2000	0.5	0.5	0.5
COLD BK	1998	0.4	0.4	0.4
	1999	0.3	0.3	0.3
EPILIMNION	1998	1.8	1.8	1.8
	1999	0.7	1.1	0.9
	2000	1.0	1.0	1.0
HYPOLIMNION	1998	2.6	2.6	2.6
	1999	1.2	5.5	3.3
	2000	1.1	1.1	1.1
METALIMNION	1999	1.1	1.1	1.1
	2000	1.2	1.2	1.2
OUTLET	1999	0.6	0.6	0.6
SONDOGARDY RD BK	1998	2.0	2.0	2.0
	1999	0.4	0.4	0.4
	2000	1.2	1.2	1.2